

2 PROJECT DESCRIPTION

2.1 INTRODUCTION

DWR is proposing to establish the SERP, which would develop a streamlined regulatory review and authorization process to facilitate implementation of annual repairs of small erosion sites on levees within the SRFCP area. The focus of the SERP is on public safety and enhancement of the environment where feasible. The SERP program is described in detail in the SERP manual contained in Appendix B, which provides the definitive description of the program. The following is a summary of the principal features of the program.

2.2 PROJECT LOCATION AND SETTING

The SRFCP is located within the Sacramento River watershed, which drains California's northern Central Valley into the middle and lower reaches of the Sacramento River and encompasses 27,000 square miles. On average, over 22 million acre-feet of water flows through the Sacramento River watershed each year (SVWQC 2004:2). The flows consist of approximately one-third of the total runoff in California and annually average 19,000 cubic feet per second (cfs) (SVWQC 2004:2). The Sacramento River is the longest river (447 miles) entirely within California. The Sacramento River is also the state's largest river by discharge, rising in the Klamath Mountains and flowing south for over 400 miles before reaching Suisun Bay, an arm of San Francisco Bay, and then to the Pacific Ocean.

The Sacramento River's hydrology has been altered by dam, weir, and levee construction. The flood management facilities that DWR maintains are located within the valley floor of the watershed. The valley drainages include the Feather River watershed, American River watershed, Sutter Bypass watershed, Yolo Bypass watershed, and Sacramento River watershed. Local Maintaining Agencies (LMAs), including DWR's maintenance yards, maintain the levees along the waterways listed below, all of which will be eligible for inclusion in the SERP (see Exhibit 2-1). However, only the waterways identified below are included in the SERP for Phase 1. After Phase 1 is complete, the Interagency Collaborative Group intends to evaluate the program's success and consider expanding the SERP coverage area to include the repair of erosion sites along the leveed sections of the remaining waterways.

PHASE 1 WATERWAYS

- ▶ Butte Creek
- ▶ Cache Creek from the Yolo Bypass to the upstream limit of the SRFCP levees
- ▶ Cherokee Canal
- ▶ Colusa Bypass
- ▶ Northern portion of Colusa Main Drain, as identified in Exhibit 2-1
- ▶ Portions of Feather River, as identified in Exhibit 2-1

- ▶ Putah Creek
- ▶ Sacramento Bypass
- ▶ Portions of Sacramento River, as identified in Exhibit 2-1
- ▶ Sutter Bypass
- ▶ Tisdale Bypass
- ▶ Wadsworth Canal
- ▶ Willow Slough Bypass
- ▶ Portions of Yolo Bypass, as identified in Exhibit 2-1
- ▶ East and West Interceptor Canals

POTENTIAL FUTURE SERP WATERWAYS

- ▶ American River from Sacramento River to River Mile (RM) 13
- ▶ Bear River from the Feather River to the upstream end of the levees above State Route 65
- ▶ Cache Slough
- ▶ Southern Portion of Colusa Main Drain, as identified in Exhibit 2-1
- ▶ Coon Creek Group Interceptor Unit 6
- ▶ Deer Creek
- ▶ Elder Creek
- ▶ Remaining portions of Feather River, as identified in Exhibit 2-1
- ▶ Georgiana Slough
- ▶ Hass Slough
- ▶ Honcut Creek
- ▶ Lindsey Slough
- ▶ Marysville Units 1, 2, and 3
- ▶ Miner Slough
- ▶ Mud Creek
- ▶ Natomas Cross Canal
- ▶ Remaining portions of Sacramento River, as identified in Exhibit 2-1
- ▶ Steamboat Slough
- ▶ Sutter Slough
- ▶ Knights Landing Ridge Cut
- ▶ Three Mile Slough
- ▶ Ulatis Creek Bypass
- ▶ Remaining portions of Yolo Bypass, as identified in Exhibit 2-1
- ▶ Yuba River from Feather River, upstream to RM 5

2.3 BACKGROUND AND NEED FOR THE PROJECT

Levees that sustain erosion damage during winter periods of high flows may undergo further erosion that over time could lead to levee failure and cause substantial flood damage in both urban and nonurban environments. Such levee failures can also cause significant adverse effects on the surrounding fish and wildlife resources. Erosion sites need to be repaired in a timely manner to maintain the integrity of the existing flood management system. Expedient repairs can also prevent further damage to the environment at these sites. Currently, small erosion repair projects require permits to be issued on a project-by-project basis. The multiple authorizations and level of interagency coordination required for individual repairs (e.g., Clean Water Act permits from USACE, Endangered Species Act compliance with USFWS and NMFS, streambed alteration agreements from CDFW, and water quality certification with the RWQCB) have often resulted in substantial delays, during which time the eroded areas have been susceptible to further damage, increasing potential public safety hazards and repair costs as repair projects are delayed.

To address this problem, the SERP Subcommittee was formed at the direction of the Interagency Flood Management Collaborative Program Group (Interagency Collaborative Group) on January 17, 2007. The subcommittee consists of a group of federal and state resource agency representatives charged with defining what constitutes a small erosion repair and determining appropriate repair designs that will adequately protect the levee system while avoiding substantial adverse effects on environmental resources. The subcommittee members have worked in concert to craft a program intended to improve current erosion repair practices, and thus to maintain the necessary level of flood risk reduction while seeking to achieve a cumulative net benefit to aquatic and terrestrial fish and wildlife resources, including habitat for sensitive species.

As part of this program, the SERP Subcommittee developed the SERP Manual (Appendix B of this DEIR), which provides the general guidelines under which the program would operate. The SERP Subcommittee has developed guidelines in several areas such as project design, conservation measures, and monitoring and reporting requirements. Additionally, a CEQA Compliance Checklist developed by DWR based on the environmental analysis in this DEIR would be used to ensure that, for each project site, repairs conducted under the SERP would comply with CEQA and to provide substantial information to streamline permitting.

2.4 PROJECT PURPOSE, GOALS, AND OBJECTIVES

The purpose of the SERP is to ensure the continued flood management integrity of the SRFCP levees while protecting environmental resources by providing an efficient method of selecting, evaluating, and permitting small erosion repair projects. The SERP uses programmatic authorizations, issued by federal and state agencies with regulatory obligations associated with

erosion repair projects to streamline the process for implementing small erosion repairs in accordance with conservation-based design and monitoring standards established by the SERP Subcommittee. Projects that qualify under the SERP are eligible to receive authorization within a shortened time frame because they are designed to minimize effects on fish and wildlife resources, including listed species, and to protect and enhance the existing aquatic and riparian habitats comprising the riverine corridor.

The program sets apart similar small erosion repair sites and develops a streamlined permitting process for these sites with the following goals:

- ▶ provide quicker repairs to small erosion sites, thereby preventing erosion areas from becoming larger;
- ▶ foster consistent regulatory compliance efforts for similar repairs, from the standpoint of both environmental protection and operations and maintenance; and
- ▶ obtain measurable data to evaluate program success.

The identified objectives of the proposed levee/bank repairs will be to:

- ▶ maintain SRFCP integrity;
- ▶ prevent further erosion and loss of riparian and nearshore aquatic habitat;
- ▶ minimize the loss of riparian vegetation and endangered species habitat resulting from delayed repairs and construction activities; and
- ▶ enhance the existing riparian vegetation corridor at the erosion sites, where applicable.

2.5 PROJECT CHARACTERISTICS

2.5.1 SERP PROJECT IDENTIFICATION AND IMPLEMENTATION PROCESS

EROSION REPAIR PROJECT IDENTIFICATION AND CHARACTERIZATION

Implementation of SERP would begin with DWR maintenance staff conducting annual maintenance surveys each spring to identify small erosion sites that need repairs within the Phase 1 SERP coverage area. DWR engineering, environmental, and archaeological staff members would conduct a baseline assessment at each site and complete a Baseline Assessment Checklist (see Section B of the SERP Manual in Appendix B). The completed checklist would include information about existing soil, levee, and vegetation conditions, and potential habitat for special-status species and cultural resources at the site. A maximum of 15 individual repair projects would be implemented annually under the SERP during Phase 1 of

the program. Potential SERP repair sites would be categorized into two tiers based on the size of the project disturbance area.

The Tier 1 site definition is as follows:

A site can be considered for Tier 1 if the footprint of new bank protection materials and including any additional vegetated area that will be disturbed by equipment during construction is 0.1 acre or less with a maximum linear foot limit of 264 feet. A separation of 500 feet between sites repaired in the same year is required.¹

The Tier 2 site definition is as follows:

A site can be considered for Tier 2 if the footprint of new bank protection materials and including any additional vegetated area that will be disturbed by equipment during construction is 0.5 acre or less with a maximum linear foot limit of 1,000 feet.

For each proposed site, DWR would select as a guide one of the seven SERP design templates created by the collaborating agencies (see Section C of the SERP Manual in Appendix B) to apply to the site. The program design templates are described in more detail in Section 2.5.2, “Program Elements,” below.

DWR would notify the applicable permitting agencies—USACE, USFWS, NMFS, CDFW, and RWQCB—of the proposed small erosion repair projects by bundling and submitting the required notification materials for up to 15 projects to the agencies as a package each spring (by June 1). The notification package (see the SERP Project Pre-construction Notification Form in Section C of the SERP Manual in Appendix B) would include a CEQA Compliance Checklist for SERP projects to document that each small erosion repair project and site is consistent with the findings and parameters of this DEIR and the SERP Manual (Appendix B) prepared for the SERP. The CEQA Compliance Checklist would be based on the findings of the SERP Final DEIR and used to determine whether the EIR provides adequate CEQA coverage for each of the SERP projects or if further project-level environmental documentation would be required to fully satisfy CEQA requirements. Upon receipt of the annual SERP notification package, the agencies would review the projects and independently respond to DWR, indicating whether the projects are acceptable under their programmatic SERP authorizations, and including any additional terms or conditions for approval in their responses. Upon receiving the agencies’ verification of SERP authorization, DWR may proceed with the

¹ Assuming the 0.1 acre is a square (2D figure with four straight sides, four interior angles and whose four sides are equal length), the conversion of 0.1 acre to linear feet would be the following: 1 acre = 43,560 square feet; 0.1 acre = 4,356 square feet. By taking the square root of 4,356 square feet, the length of each side is 66 feet. Thus the perimeter would be 264 feet. Note: If 0.1 acre is a circle, the circumference of the circle would be 117 linear feet. So, as a compromise to meet the SERP’s goals, NMFS will agree to the maximum of 264 linear feet (Martinez, pers. comm., 2010).

repairs in accordance with the applicable conservation measures (identified in Section I of the SERP Manual) and any additional terms or conditions for approval that the agencies may require. This process should shorten the permitting time frame for those projects, allowing the necessary repairs to be implemented in a timely manner while fully considering and protecting environmental resources.

To ensure that SERP projects are unconnected single and complete actions and not part of a larger action that would exceed the SERP's size and placement limits, each project must demonstrate independent utility. A SERP project will be considered to have independent utility if it would be constructed absent the construction of other projects in the project area.

Each repair would also be entered into a geographic information system (GIS) database developed by DWR to monitor the progress of the SERP. The database would be made available to the agencies involved in authorizing SERP projects.

SITE REPAIRS

Construction Process and Staging, Sequencing, and Equipment

Construction activities would take place at individual sites throughout each summer and fall during the 5-year Phase 1 period. Each site would require no more than 1–4 weeks of active construction. Effective construction and replanting methods, employed in the recent past for similar small erosion control projects, would be used. Heavy equipment and vehicles used during construction may include the following:

- ▶ large bulldozer(s),
- ▶ trucks (pick-ups, end dumps, and flatbeds, water truck, hydroseeder),
- ▶ small bulldozer(s),
- ▶ barge with crane,
- ▶ cement mixer(s) with extended arm(s) (for use in depositing soil), and
- ▶ excavator(s).

Revetments would be placed by cranes mounted on barges or, in locations where this is not possible, from adjacent landside areas using excavators. A cement mixer with an extended arm can be used as a means to intermix soil with rock in the repair. Waterside construction would occur where it minimizes noise, traffic, and vegetation disturbances. The construction contractor would use adjacent landside areas, maintenance toe roads, or the crown roads for staging of vehicles or other associated construction equipment, and temporary placement of rock, soil, and plant materials, as necessary.

Bank reconstruction would incorporate plantings into the revetment in accordance with the bioengineering techniques outlined in the program design templates (Appendix A). The upper

bank may also be hydroseeded and covered with biodegradable materials to control erosion and stabilize the bank while plantings become established. Willow cuttings and other native vegetation would be installed during placement of the revetment or after construction during the appropriate planting season. Precise planting timelines would be determined upon the availability of planting materials and in coordination with relevant SERP-authorizing agencies.

Maintenance

The program design templates have been developed with the intent that once repaired the erosion sites would require little or no additional upkeep or maintenance. During the initial vegetation establishment period, DWR intends to manage the SERP plantings consistent with the CVFPP's vegetation management strategy. Maintenance activities for planted areas may include removing invasive vegetation, pruning planted vegetation for visibility and accessibility on levees, and replacing dead plantings. Once the final success criteria are achieved, the vegetation should be self-maintaining. Maintenance activities that focus on maintaining restoration plantings, in particular woody vegetation plantings, would be conducted for 5 years or longer as necessary until the final success criteria are met. DWR will be responsible for establishing and maintaining plants in accordance with the monitoring and success criteria section of the SERP Manual (see Section H of the SERP Manual in Appendix B), including meeting specific success criteria for vegetation establishment (discussed below).

DWR recognizes that woody vegetation on levees must be appropriately managed. The CVFPP's vegetation management strategy is focused on improving public safety by providing for levee integrity, visibility, and accessibility for inspections, maintenance, and flood fight operations. Vegetation will be removed (in coordination with resource agencies) only when it presents an unacceptable threat. Furthermore, flood management actions will protect existing, and promote the development of, appropriate vegetation for erosion control on the waterside slope, outside of the vegetation management zone.

2.5.2 PROGRAM ELEMENTS

DESIGN ALTERNATIVES

To maintain the SRFCP levee system, erosion repairs are needed on a continual basis. The SERP Subcommittee discussed a dozen repair alternatives and decided that the SERP would use seven design templates:

1. Bank fill rock slope with live pole planting
2. Willow wattle with rock toe
3. Branch layering
4. Rock toe with live pole planting
5. Soil and rock fill at the base of a fallen tree (including root wad revetment option)

6. Bank fill rock slope with native grass planting
7. Bank fill rock slope with emergent vegetation planting

Plans and descriptions of the seven design templates are included in Section C of the SERP Manual (see Appendix B of this DEIR).

A site-specific cross-section, plan view, and planting plan/species list would be developed for each SERP project based on the design template selected for the repair. This information would be provided to the agencies along with the project notification materials in the annual SERP notification packages. The site-specific design plans would be prepared as a coordinated effort by DWR maintenance, engineering, and environmental staff and would show plan view details (e.g., spacing, location, depth). Minor changes to the program design templates may be recommended for specific projects based on detailed knowledge of the sites.

MONITORING AND SUCCESS CRITERIA

Through application of the seven design templates and associated bioengineering erosion control methodologies, SERP projects are intended to achieve “self-mitigation” for unavoidable impacts to biological resources. SERP project sites would be considered “self-mitigating” if the successful establishment of vegetation plantings incorporated into the project design would restore or enhance the biological function of the existing conditions at the erosion sites. To ensure that SERP project vegetation plantings are successful and aquatic and riparian resource functions are enhanced or restored with SERP project implementation, the program would include monitoring and reporting requirements and success criteria. These monitoring and reporting requirements and success criteria for SERP projects are presented in Sections G and H of the SERP Manual (see Appendix B of this DEIR). Monitoring of individual sites is anticipated to extend for 5 years after site construction is completed, or longer as necessary until the final success criteria are achieved and the appropriate agencies have provided written approval.

The annual monitoring reports would include an evaluation of project success in meeting the established annual performance goals and if needed a plan for implementing remedial actions to help ensure that the final success criteria are met.

Annual monitoring reports that evaluate whether the site meets annual performance goals and is progressing toward achieving the final success criteria would be submitted to the SERP agencies by November 30th of each year. Pre- and post-construction site visits from regulatory agency personnel may occur at any time to determine the effectiveness of this program and whether contingency actions and/or adjustments to the established success criteria should be made. Success of the self-mitigating aspect of the design templates would be a key factor in determining whether the SERP is extended beyond the first 5-year phase.

CONSERVATION MEASURES

Conservation measures for the SERP have been developed in coordination with the agencies represented on the SERP Subcommittee (see Section I of the SERP Manual). Measures have been identified that would be applicable to all SERP project sites, including timing restrictions to avoid work during important times for various special-status species, measures to avoid vegetation and habitat disturbance, hazard prevention measures, erosion control measures, and other mandatory construction measures.

Resource-specific conservation measures have also been developed by the SERP Subcommittee for the following species, habitats, and resources:

- ▶ sensitive biological resources,
- ▶ giant garter snake,
- ▶ valley elderberry longhorn beetle,
- ▶ delta smelt,
- ▶ Swainson's hawk,
- ▶ burrowing owl,
- ▶ bank swallow,
- ▶ nesting birds/migratory birds,
- ▶ raptors,
- ▶ woody shaded riverine habitat, and
- ▶ cultural resources.

In distributing the project notification materials to SERP agencies, DWR would select and include a list of those resource-specific and, if appropriate, supplemental conservation measures that are applicable to a specific site, and the permitting agencies would have an opportunity to revise the list for each project.

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